

In the Claims:

1-64 (Cancelled)

65. (Currently Amended) A method of producing an addressable ~~complex~~ carbohydrate library, the method comprising the steps of:

- (a) providing an array having a plurality of addressable locations; and
- (b) ~~enzymatically synthesizing a complex-carbohydrate structure on each of~~ said plurality of addressable locations of said array using naturally occurring monosaccharides units such that a stereo-specificity of each bond interconnecting said monosaccharide units of said plurality of carbohydrate structures is defined by said addressable location thereof on said array, thereby generating the addressable ~~complex-carbohydrate~~ library having a plurality of ~~complex-carbohydrate structures~~ structures each defined by said addressable location thereof on said array and each being composed of at least 2 and no more than 20 ~~of said naturally occurring monosaccharides units~~ each being naturally occurring.

66. (Currently Amended) The method of claim 65, wherein each of said plurality of ~~complex-carbohydrate~~ structures is attached to said array via a linker which includes at least one ethylenglycol derivative, at least two cyanuric chloride derivatives and an anilino group.

67. (Previously Amended) The method of claim 66, wherein said linker includes three ethylenglycol derivatives, four cyanuric chloride derivatives and an anilino group.

68. (Currently Amended) The method of claim 65, wherein at least one ~~complex-carbohydrate~~ structure of said plurality of ~~complex-carbohydrate~~ structures is a branched ~~complex-carbohydrate~~ having a single structure defined by said addressable location thereof on said array.

69. (Cancelled)

3

70. (Currently Amended) A method of producing an addressable ~~complex~~ carbohydrate library, the method comprising the steps of:

- (a) providing an array having a plurality of addressable locations;
- (b) attaching to each of said plurality of addressable locations a linker including at least one ethylenglycol derivative, at least two cyanuric chloride derivatives and an anilino group
- (c) ~~enzymatically synthesizing a complex-carbohydrate structure on said linker in each of said plurality of addressable locations of said array, using naturally occurring monosaccharides units thereby generating the addressable complex-carbohydrate library having a plurality of complex-carbohydrate structures each attached to said array via said linker and each being composed of at least 2 and no more than 20 of said naturally occurring monosaccharides units~~ each being naturally occurring.

71. (Cancelled)

72. (Previously Amended) The method of claim 70, wherein said linker includes three ethylenglycol derivatives, four cyanuric chloride derivatives and an anilino group.

73. (Currently Amended) The method of claim 70, wherein at least one ~~complex-carbohydrate structure of said plurality of complex-carbohydrate structures is a branched complex-carbohydrate having a single structure defined by said addressable location thereof on said array.~~

74. (Currently Amended) The method of claim 70, wherein step (c) is effected by parallel enzymatic synthesis of said plurality of ~~complex-carbohydrate structures.~~

75. (New) The method of claim 70, wherein said monosaccharide units are each independently selected from the group consisting of D-Glucose, D-Galactose, D-Mannose, L-Fucose, D-Xylose, D-N-Acetylglucosamine, D-N-Acetylgalactosamine,

4

D-Glucuronic acid, D-Galacturonic acid, L-Rhamnose, L-Arabinose, D-Fructose, D-Apiose, (3-C-(Hydroxymethyl)-D-glycero-tetrose), L-Aceric acid (3-C-Carboxy-5-dexoyl-xylose) Sialic Acid, and 2-sulfo-D-Mannose, 4-sulfo-L-Fucose, 2,6-di-sulfo-D-Mannose and 6-sulfo-D-Mannose.

76. (New) The method of claim 70, wherein said synthesizing is effected enzymatically.

77. (New) The method of claim 65, wherein said monosaccharide units are each independently selected from the group consisting of D-Glucose, D-Galactose, D-Mannose, L-Fucose, D-Xylose, D-N-Acetylglucosamine, D-N-Acetylgalactosamine, D-Glucuronic acid, D-Galacturonic acid, L-Rhamnose, L-Arabinose, D-Fructose, D-Apiose, (3-C-(Hydroxymethyl)-D-glycero-tetrose), L-Aceric acid (3-C-Carboxy-5-dexoyl-xylose) Sialic Acid, and 2-sulfo-D-Mannose, 4-sulfo-L-Fucose, 2,6-di-sulfo-D-Mannose and 6-sulfo-D-Mannose.

78. (NEW) The method of claim 65, wherein said monosaccharide units are in alpha or beta configurations.

79. (NEW) The method of claim 65, wherein said monosaccharide units are sulfated.

80. (NEW) The method of claim 65, wherein said synthesizing is effected enzymatically.

81. (New) A method of producing an addressable carbohydrate library, the method comprising the steps of:

- (a) providing an array having a plurality of addressable locations; and
- (b) synthesizing a carbohydrate structure on each of said plurality of addressable locations of said array such that each addressable location supports a plurality of carbohydrate structures of identical structure and stereospecificity, thereby generating the addressable carbohydrate library

5

having a plurality of carbohydrate structures each being composed of at least 2 and no more than 20 monosaccharide units each being naturally occurring.

82. (New) The method of claim 81, wherein each of said plurality of carbohydrate structures is attached to said array via a linker which includes at least one ethylenglycol derivative, at least two cyanuric chloride derivatives and an anilino group.

83. (New) The method of claim 82, wherein said linker includes three ethylenglycol derivatives, four cyanuric chloride derivatives and an anilino group.

84. (New) The method of claim 81, wherein at least one carbohydrate structure of said plurality of carbohydrate structures is a branched carbohydrate having a single structure defined by said addressable location thereof on said array.

85. (New) The method of claim 81, wherein said monosaccharide units are each independently selected from the group consisting of D-Glucose, D-Galactose, D-Mannose, L-Fucose, D-Xylose, D-N-Acetylglucoseamine, D-N-Acetylgalactoseamine, D-Glucuronic acid, D-Galacturonic acid, L-Rhamnose, L-Arabinose, D-Fructose, D-Apiose, (3-C-(Hydroxymethyl)-D-glycero-tetrose), L-Aceric acid (3-C-Carboxy-5dexoyl-xylose) Sialic Acid, and 2-sulfo-D-Mannose, 4-sulfo-L-Fucose, 2,6di-sulfo-D-Mannose and 6-sulfo-D-Mannose.

86. (New) The method of claim 81, wherein said monosaccharide units are in alpha or beta configurations.

87. (New) The method of claim 81, wherein said monosaccharide units are sulfated.

88. (New) The method of claim 81, wherein said synthesizing is effected enzymatically.